

MARYLAND LIFE SCIENCES  
ADVISORY BOARD

ANNUAL STATUS REPORT  
2011

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## **Introduction**

The opening of the Maryland Biotechnology Center (MBC) in September 2009 was an outgrowth of BioMaryland 2020, a ten year strategic plan to maximize Maryland's unique life sciences research and development assets, location, and workforce, and to ensure the State's continued global leadership in the biosciences. Currently, 6.5% of the State's GDP (\$17.6 billion) and 6.5% of all jobs in Maryland are related to life sciences. Maryland has over 1,700 establishments involved in life sciences work, the 5<sup>th</sup> highest concentration in the United States. More than 160,000 jobs in the State are directly and indirectly related to life sciences, generating \$9.6 billion in salaries and providing \$500 million in income and sales tax support annually to the State. This sector directly employs 71,600 persons at an average salary of \$91,100/year (see Appendix A). More than one-third of all of Maryland's job gains during 2002-2010 were in the life sciences sector.

## **LSAB Background**

On May 9, 2007, to assist in maintaining the preeminence of the Maryland life sciences industry, Governor Martin O'Malley signed Senate Bill 104, establishing the Maryland Life Sciences Advisory Board (LSAB). On September 18, 2007, the Governor formally announced the members of the LSAB at a ceremony held in Annapolis.

The LSAB is comprised of 15 members and includes the Secretary of the Maryland Department of Business and Economic Development (DBED), a representative designated by the Maryland Technology Development Corporation (TEDCO), and 13 members appointed by the Governor to include: three representatives from federal agencies with life science missions, five representatives from biotechnology businesses in Maryland, four representatives from institutions of higher education, and a member of the general public. (See Appendix B)

## **Summary of 2011 Activities**

For the past year, the LSAB has actively engaged Maryland's bioscience community in an on-going dialogue about the State's life sciences accomplishments and future directions, and participated in several activities. The most notable activities include advocating to maintain funding for the Maryland Biotechnology Investment Incentive Tax Credit (BIITC) at \$8 million; advising the MBC on MBC activities, and supporting various life sciences programs as per the BioMaryland 2020 strategic plan.

In 2011, the LSAB held 3 meetings (See Appendix B).<sup>1</sup> The first meeting was held at the National Institute of Health (NIH). At this meeting, the LSAB focused on the Translational Research Institute, a \$700M program designed to accelerate drug development, one of the key challenges for the pharma industry with direct relevance to Maryland 200 companies involved in drug discovery target validation, and translation to marketable products.

The four major areas of focus in 2011 included:

- Increasing Access to Capital
- Ensuring Industry Growth and Competitiveness
- Advancing Global Leadership Role/BioMaryland Branding
- Expanding Workforce Development

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<sup>1</sup> A public information and resource website for all LSAB meeting agendas and documents can be found at [www.marylandbiocenter.org](http://www.marylandbiocenter.org).

## **I. Increasing Access to Capital**

One of the important priorities of the BioMaryland 2020 Strategic Plan (BioMaryland) is to increase access to capital. Since FY 2010, the cumulative investments in Maryland's life sciences infrastructure according to BioMaryland have totaled almost \$421 million (see Appendix B). In light of the recession, many funding initiatives have been tempered. However, the BIITC, though short of the amount proposed in BioMaryland, has been increased from its initial level of \$6 million to \$8 million for each of the past 2 years. In addition, the State's new *InvestMaryland* \$70 million venture fund is a strong demonstration of commitment to the growth of this sector. Through this program, Maryland will take an ownership stake in qualified biotech companies and will partner with private venture firms to support business growth for companies which have matured beyond the startup phase.

### Biotechnology Investment Incentive Tax Credit Program

One of the most successful programs administered by DBED is the BIITC. Now entering its sixth year, Maryland's BIITC remains the most competitive of its kind in the United States and serves as an exemplary model for angel investment incentives. This program provides income tax credits equal to 50% of an eligible investment up to \$250,000 for investors in qualified seed and early stage Maryland biotechnology companies. To date, \$40 million in tax credits have been awarded, benefitting more than 60 companies Statewide who collectively have received more than \$80 million in investment.

### *InvestMaryland*

*InvestMaryland* is a tax credit program designed to create thousands of jobs and revitalize venture capital funding in Maryland. This \$70 million fund, approved by Maryland lawmakers during the 2011 General Assembly, is the largest venture capital investment initiative in the State's history. Insurance companies will bid on credit for the fund, and the proceeds then will be split among private venture firms and the Maryland Venture Fund (MVF). The MVF funds will be used to help financing traditional stage businesses in industries including life sciences, information technology, and clean energy.

### Maryland Biotechnology Center Entrepreneurial Award Development Program

The Maryland Biotechnology Center established an infrastructure for competitive awards to companies and universities offering specialized analytical services to companies. In 2011, sixty (60) companies applied for grants and nine (9) awards were made, totaling \$1.8 million. These awards, which have a maximum of \$200,000, were divided into 3 categories (see Appendix C):

The *Translational Research* awards were intended to catalyze the movement of ideas from research/invention to early stage product development. In 2011, recipients included Noble Life Sciences, Inc., Unither Virology, LLC, and Paragon Bioservices, Inc.

*Commercialization awards* were intended to bridge the gap from later stage product development to market entry. A&G Pharmaceutical Inc., 20/20 GeneSystems, Telcare, Inc., DioGenix, and Plasmonix received awards in 2011.

## **II. Ensuring Industry Growth and Competitiveness**

### **MBC BioEntrepreneur Program**

The MBC BioEntrepreneur Program provides a wide variety of services to bioscience entrepreneurs to help them establish and/or grow their businesses in Maryland. These include business plan counseling and resource support, identification of capital sources, access to regulatory expertise and intellectual property advice, location assistance, and training support for employees. One of the more popular MBC resources used by bioentrepreneurs is access to industry databases (*Datamonitor*, *Deloitte Recap*, *Discovery Logic's Synapse*, *Frost & Sullivan*, *MedTRACK*, *MedTRACK Venture Finance*, *Lexus Nexus* and *Hoover's*) to support product development and marketing efforts. During the past 2 years, more than 200 companies have performed thousands of searches on the eight databases at MBC's Baltimore or Rockville offices to fortify their business plans. MBC spends approximately \$160,000 per year to make these databases available for companies. This annual investment is leveraged 25x. Had they been purchased directly by the companies the price for the reports downloaded would have exceeded \$4 million dollars. Each company visit to MBC's offices for this database research also enables MBC staff to connect directly with the bioentrepreneur and learn more about his or her company, share additional resource information, and learn of other opportunities for MBC to assist with the company's business growth.

### **Business Resources**

MBC also offers business development assistance to established firms with site selection, legal compliance, incentives (e.g. job tax credits, export MD grants), and other resources as they expand their businesses in Maryland. Since July 1, 2009, apart from the support provided directly by the MBC, DBED's Business Development team supported more than 200 of these requests involving the retention of more than 500 jobs and the creation of more than 700 new positions.

### **Industry Advocacy**

In addition, MBC works to educate business leaders and potential industry partners on the regulatory process, best practices for effective translational research, and other topics helpful to business growth in the life sciences sector. MBC also advocates for policies facilitating commercialization opportunities and other life sciences business development initiatives.

### **Federal Initiatives**

During the last year, MBC has engaged in a number of discussions with the NIH Office of Technology Transfer regarding a Preferred Intermediary Party (PIP) agreement to increase the accessibility of NIH technologies to the startup community.

Through discussions with NIST, MBC has proposed a joint effort to organize a BIO meeting with federal labs, academia, and industry in 2012 highlighting best practices and showcasing technology commercialization and partnership opportunities. NIST has offered to make their facility available as the venue for the event, projected for December 2012.

## **III. Advancing Global Leadership Role/BioMaryland Branding**

### **International Outreach**

The BIO 2011 meeting took place on June 27<sup>th</sup>-30<sup>th</sup> in Washington, DC and featured an unprecedented number of activities showcasing Maryland as a premier location for bioscience

research and business growth. MBC, in partnership with fellow lead sponsors at DBED, TCM/MDBio, Montgomery County, MedImmune, and HGS helped the State to secure major visibility at this conference once again. More than 1000 BIO conference attendees walked through the BioMaryland booth—a collaborative exhibit featuring 44 of the State’s leading bio-related academic and government institutions, and industry leaders. New in the booth this year was a special product showcase highlighting technologies from an additional eleven companies.

The product showcase and exhibits provided a unique backdrop for partnering and prospect meetings, and for special events such as the Maryland Women in BIO panel moderated by Governor O’Malley, the MBC translational research, commercialization, and shared services awards program hosted by Secretary Johansson, and a press conference honoring Senator Nancy King for her recognition as Bio’s Legislator of the year. BioMaryland also hosted the annual conference gala which was attended by 4,000 conferees from around the world. BioMaryland consortium members individually hosted numerous open houses, facilities tours, receptions and educational programs highlighting Maryland companies, bioparks, academic institutions, federal labs, and other resources.

#### Online Marketing

In February 2010, MBC in cooperation with DBED’s marketing team launched a new quarterly e-newsletter, *BioPulse*. This publication features CEO and company spotlights and other news about Maryland’s life sciences community—including announcements regarding funding, discoveries, expansion and partnership activity, awards, and special events. In 2011, MBC added social media tools (i.e. Twitter and Facebook) to its web-site and launched its first blog, initially focused on BIO 2011. Archived copies of BioPulse and links to the social media tools are available at MBC’s website. The site provides an important link for current information about Maryland’s biocompanies and the resources and partnership opportunities available to them. It also enables these companies and resources to be showcased not only locally, but also to those outside the State who may be thinking of starting a company, moving a company, or opening a U.S. headquarters or facility in Maryland. Visits to the MBC site have more than tripled since the site opened in September 2009 to an average of more than 7,000 visitors per month. Since the site opened, it has received more than 147,000 visits from 152 countries. More than half of this traffic has occurred during the last 12 months.

#### **IV. Expanding Workforce Development**

Although funding for the Workforce Development initiative and bioscience career development activities included in BioMaryland has been more limited, MBC has looked for ways to partner with the industry using any and all available resources. In these efforts, MBC has convened two meetings of the Maryland Biotechnology Training Consortium and guided development of its leadership to sustain its efforts. Additionally, MBC provided Partnership for Workforce Quality (PWQ) training grants and has increased the outreach for providing student internships to Maryland bioscience companies. Workforce development and training is an area where Maryland can excel. Programs recently developed by Montgomery College and UMBC include 10-day GMP speed training to address surge requirements in biomanufacturing. These and other programs were highlighted at the October 13, 2011 LSAB meeting.

## **BIO Maryland 2020 - Initial Implementation**

In 2011, the following programs were funded to support the life science sector.

### **FY 2011**

- \$3.9 million: Maryland Biotechnology Center
- \$8 million: Biotechnology Investment Incentive Tax Credit Program
- \$6 million: Research and Development Tax Credit Program
- \$1.4 million: Maryland Venture Fund
- \$10.4 million: Maryland Stem Cell Research Fund
- \$16.1 million: Montgomery College/Germantown Science and Technology Park <sup>2</sup>
- \$3.4 million: TEDCO Budget (technology transfer and commercialization programs within)
- \$1.5 million: MIPS program at the University of Maryland

### **Summary**

MBC performs vital roles as a central information portal, industry advocate, resource provider and catalyst for the development and growth of Maryland's bioscience industry. With the majority of Maryland's recent job gains housed in this sector, and the employee tax support bioscience jobs provide the State, it is clear this industry is vital to Maryland. With the strategy set forth by the LSAB, and supported by MBC, the State is uniquely positioned to leverage its bioscience research, location and workforce assets, in a way that will continue to benefit not only Maryland residents but also the global community. Whether it is mapping the human genome, curing AIDS, feeding babies, or providing better patient care through improved technologies, Maryland's bioscience industry has a critical role feeding, fueling, and healing the world. MBC's ability to support the continued growth of this vibrant industry will establish Maryland's place globally to accomplish the business of Bio.

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<sup>2</sup> Other life science/technology capital projects include UMB School of Pharmacy, Coppin State University Science & Technology Center, Montgomery College Rockville Science Center, Frederick Community College Science/Tech Hall, and Prince George's Community College Center for Health Studies (~\$20.3 million aggregate) The 3 year expenditures are outlined in Appendix C.

## Appendix A

**Table 1: MD's 71,618 life sciences jobs are in the private sector, federal government and academic institutions**

<b>Maryland Life Sciences Jobs, Wages and Salaries</b>			
<b>Group</b>	<b>Jobs</b>	<b>Aggregate Wages &amp; Salaries</b>	<b>Average Annual Salary</b>
Private Sector	33,602	\$3,058,887,640	\$91,034
Federal Government	29,777	\$2,772,774,686	\$93,118
Academic	8,240	\$692,744,795	\$84,074
<b>Total</b>	<b>71,618</b>	<b>\$6,524,407,122</b>	<b>\$91,100</b>
Source: DBED analysis on data from the Maryland Department of Labor, Licensing and Regulation and Bureau of Labor Statistics.			

**Table 2: MD's private sector life sciences jobs are found largely in research, testing and medical laboratories**

<b>Maryland Private Life Sciences Jobs, Salaries and Facilities 2010</b>				
<b>Subsector</b>	<b>Employment</b>		<b>Facilities or Establishments</b>	<b>Average Annual Salary</b>
	<b>Jobs</b>	<b>Share</b>		
Agricultural Feedstock and Chemicals	256	0.8%	22	\$63,780
Drugs and Pharmaceuticals	6,574	19.6%	65	\$102,084
Medical Devices and Equipment	1,962	5.8%	86	\$67,612
Research, Testing and Medical Laboratories	24,810	73.8%	1,579	\$90,239
<b>Total</b>	<b>33,602</b>	<b>100%</b>	<b>1,752</b>	<b>\$91,034</b>
Source: DBED analysis on data from the Maryland Department of Labor, Licensing and Regulation and Bureau of Labor Statistics.				



## Appendix B

### 2011 Life Sciences Advisory Board Members

**Chair:** Mr. Thomas Watkins, *CEO, Human Genome Sciences, Inc.*

**Standing:** Mr. Christian S. Johansson, *Secretary, DBED*  
Mr. Rob Rosenbaum, *President and Executive Director, Maryland Technology Development Corporation (TEDCO)*

**Appointed:** Dr. Patrick G. O'Shea, *Interim Vice President for Research, University of Maryland, College Park*  
Ms. Francesca Cook, *Vice President of Policy and Government Affairs, Pharmathene, Inc.*  
Dr. Stephen Desiderio, *Director, Institute for Cell Engineering, Johns Hopkins School of Medicine*  
Dr. Peter Hobart, *Science Director, US Army Medical Research Institute of Infectious Diseases (USAMRIID)*  
Mr. David Iannucci, *Assistant Deputy Chief Adm. Officer, Prince George's County Government*  
Ms. Rachel King, *Chief Executive Officer, Glycomimetics, Inc.*  
Dr. Nina Lamba, *President, CCL Biomedical, Inc.*  
Dr. Jay A. Perman, M.D., *President, University of Maryland, Baltimore*  
Dr. Hercules Pinkney, *President Emeritus, Montgomery College*  
Dr. Mark Rohrbaugh, *Director, Office of Technology Transfer*  
Mr. David W. Smith, *Business Director, Lonza Walkersville, Inc.*  
Dr. Janet Woodcock, *Director, Center for Drug Evaluation and Research, Food and Drug Administration*

### 2011 Calendar of Activities for the Life Science Advisory Board

All meeting agendas, presentations, minutes, and public comments can be found on the LSAB website: [www.marylandbiocenter.org](http://www.marylandbiocenter.org)

<b>May 12, 2011</b>	<b><i>Meeting of the LSAB</i></b> National Institute of Health, NIH Rockville, MD
<b>August 10, 2011</b>	<b><i>Meeting of the LSAB</i></b> Glycomimetics 401 Professional Drive, Suite 250 Gaithersburg, MD
<b>October 13, 2010</b>	<b><i>Meeting of the LSAB</i></b> Johns Hopkins Univ. Forest City Rangos Bldg. 855 N. Wolfe Street Baltimore, MD

## Appendix C– BIO 2020 Strategic Plan Funding: 2010-2012

Investments in Maryland's Life Sciences Infrastructure				
Program	2010	2011	2012	Total
<b>Venture Capital Development</b>				
Enterprise Investment Fund	0.95	0.55	1.20	2.70
InvestMaryland	0.00	0.00	11.65	11.65
MEDAAF	1.25	0.50		1.75
MIDFA		0.15		0.15
Sunny Day Fund				
<b>Tax Credits</b>				
Maryland Biotech Investor Tax Credit Program	6.00	8.00	8.00	22.00
R&D Tax Credit Program	6.00	6.00	6.00	18.00
<b>Research and Development</b>				
Center for Biosystems Research - UMCP			1.70	1.70
Institute for Bioscience and Biotechnology Research (IBBR)- UMCP, UMB			6.00	6.00
Maryland Stem Cell Research Fund	12.35	10.40	12.40	35.15
MIPS Operating Budget (UMCP)	0.39			0.39
MIPS Research Grants	2.52	4.20		6.72
Nanotechnology Initiatives	0.33	0.00		0.33
University of Maryland Biotechnology Institute	46.96			46.96
<b>Technology Transfer and Commercialization</b>				
Biotech TechStart (TEDCO)	0.09			0.09
Maryland Biotechnology Center	4.69	3.79	3.63	12.11
Tech Transfer at USM			4.50	4.50
TEDCO Funding (includes technology transfer, commercialization funds, and MIPS)	3.39	3.46	3.27	10.12
University Technology Development Fund (TEDCO)	0.34	0.20		0.54
<b>Miscellaneous</b>				
Partnership for Workforce Quality	0.49	0.07		0.57
Project Lead the Way			0.90	0.90
<b>Programs Subtotal</b>	<b>85.75</b>	<b>37.32</b>	<b>59.25</b>	<b>182.31</b>
<b>Capital Projects</b>				
Cecil CC Sciences Lab			2.15	2.15
College of Notre Dame of MD New Pharmacy School	3.50	0.00	0.00	3.50
Coppin State University Science & Technology Center	9.75	6.50		16.25
East Baltimore Biotechnology Park	5.00	5.00	2.50	12.50
Forensic Medical Center @ UMD BioPark	2.85			2.85
Frederick Community College Science/ Tech Hall	0.00	0.46	4.65	5.11
Greater Washington Life Sciences Fund	6.00			6.00
Howard CC Health Sciences Building	2.00	9.47	9.47	20.94
Howard CC Science, Engineering, and Technology Building	0.00	0.00	2.97	2.97
Montgomery College Rockville Science Center	1.01	4.24	6.21	11.46
Montgomery College/ Germantown Bioscience Education Center	16.10	16.10	0.00	32.20
Prince George's Community College Center for Health Studies	18.06	6.51		24.57
UMB Health Sciences Research Facility	0.00	0.00	4.00	4.00
UMB School of Pharmacy	13.70	2.61	0.00	16.31
UMBC Center of Marine Biology	0.00	0.00	0.21	0.21
UMCP Physical Sciences Complex	4.62	41.10	30.10	75.82
<b>University Capital Projects Subtotal</b>	<b>68.74</b>	<b>85.49</b>	<b>62.24</b>	<b>216.46</b>
<b>All Capital Projects Subtotal</b>	<b>82.58</b>	<b>91.99</b>	<b>62.24</b>	<b>236.81</b>
<b>Totals</b>	<b>168.33</b>	<b>129.30</b>	<b>121.49</b>	<b>419.12</b>

